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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/586,686	07/20/2006	Yasuaki Norimatsu	520-46388X00	7326
20457 7590 08/28/2009 ANTONELLI, TERRY, STOUT & KRAUS, LLP 1300 NORTH SEVENTEENTH STREET SUITE 1800 ARLINGTON, VA 22209-3873				
EXAMINER SCHNEIDER, CRAIG M				
ART UNIT 3753		PAPER NUMBER		
NOTIFICATION DATE 08/28/2009		DELIVERY MODE ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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### Office Action Summary

**Application No.**

10/586,686

**Applicant(s)**

NORIMATSU ET AL.

**Examiner**

CRAIG M. SCHNEIDER

**Art Unit**

3753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 June 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 July 2006 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CDC)
- Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the coating of claim 6 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

2. The disclosure is objected to because of the following informalities:

On page 15, line 12, "PTEF" should be -PTFE--.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-4, 9, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Saulle (4,979,652).

Saulle discloses a fuel container for a fuel cell comprising a container body (1 and 2), which is provided with a liquid fuel chamber (3) for storage of liquid fuel and a discharge means accommodating chamber (4) for accommodating means for discharging the liquid fuel; a valve (7) disposed in the container body to discharge or shut off the liquid fuel; and a partition wall member (10) disposed slidably in the interior of the container body, wherein the partition wall member partitions the interior of the container body into the liquid fuel chamber and the discharge means accommodating chamber, the liquid fuel chamber and the discharge means accommodating chamber are in communication with each other through the partition wall member, and at least one of sliding surfaces of the container body and the partition wall member contains a material of a low frictional coefficient not dissolving out into the liquid fuel (col. 2, line 35 to col. 4, line 3).

Regarding claims 2, 3, and 4; the connecting portion is the area in which the valve (7) is housed and connecting the valve to a fuel cell is intended use which does not patentably distinguish over the prior art since the device could be connected to a fuel cell.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Saulle in view of Deinzer et al. (WO 03/043112, utilizing US2006/0172171 as a translation).

Saulle discloses all the features of the claimed invention except that the valve is urged in the direction of a nozzle outlet by means of a spring. Deinzer et al. disclose the use of a valve (411) that is spring urged in the direction of a nozzle outlet (1a) (page 4, para. 73-76).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize a valve urged closed by a spring in the outlet as disclosed by Deinzer et al. as the valve structure in Saulle, in order to provide a positive closing valve.

7. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saulle in view of Gupta (2003/0019888).

Saulle discloses all the features of the claimed invention except that the partition wall member is coated in PTFE. Gupta discloses coating the partition wall members contact surface (300) in PTFE (para. 77).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize a PTFE coating on the contact surface as disclosed by Gupta with the contact surface of the piston of Saulle, in order to provide a self-lubricating contact between the piston and the chamber.

8. Claims 6, 8, 11-14, 16, 17-21, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saulle in view of Baumann (5,033,940).

Saulle discloses all the features of the claimed invention except that the partition wall member is coated in diamond-like carbon. Baumann discloses coating the piston surface (8) in diamond-like carbon (col. 5, lines 22-42).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize a diamond-like carbon coating on the piston surface as disclosed by Baumann on the outer surface of the piston of Saulle, in order to provide a wear resistant piston.

Note: Regarding methanol or ethanol as presented in the claim, the material that is being worked upon by the apparatus is not the patentable feature unless the apparatus can not function with the material. See MPEP 2115.

9. Claims 15 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saulle in combination with Baumann as applied to claim 11 above, and further in view of Deinzer et al. (WO 03/043112, utilizing US2006/0172171 as a translation).

Saulle in combination with Baumann disclose all the features of the claimed invention except that the valve is urged in the direction of a nozzle outlet by means of a spring. Deinzer et al. disclose the use of a valve (411) that is spring urged in the direction of a nozzle outlet (1a) (page 4, para. 73-76).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize a valve urged closed by a spring in the outlet as disclosed by Deinzer et al. as the valve structure in the device of Saulle and Baumann, in order to provide a positive closing valve.

#### ***Response to Arguments***

10. Applicant's arguments filed 6/22/09 have been fully considered but they are not persuasive.

11. The applicant is arguing that the coating of claim 6 does not have to be depicted and is indicating section 601.01(f) of the MPEP for support that the coating does not have to be shown. The examiner disagrees with the applicant because the section of the MPEP that is being indicated is "Applications Filed Without Drawings". This application has clearly been filed with drawings and further the section indicates that a drawing would not be necessary if the item that is being coated is paper, cloth, or an article of known and conventional character with a particular composition unless significant details of structure or arrangement are involved in the article claim. This is clearly not the case since the claim language details the various structural elements of the device.

12. The applicant is arguing that the Saulle reference fails to disclose that the partition wall member has material of a low frictional coefficient not dissolving out into the liquid fuel. The examiner disagrees and asserts that this is an inherent feature of the invention since the partition wall needs to move up and down in the internal chamber. The material of the partition wall would have to be of a material with a low coefficient and further would not degrade (dissolve into the solution).

13. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the Gupta reference discloses a Teflon coating for the contact between the partition wall member and the internal chamber and Saulle also discloses a partition wall member that moves in an internal chamber therefore the two references are dealing with the same subject matter and coating the outer layer of Saulle with Teflon for a self-lubricating surface would be a reason to combine the two references.

14. In response to applicant's argument that Baumann and Saulle is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the



claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Baumann discloses a piston with diamond-like carbon as a coating surface to reduce friction and the Saulle reference utilizes a partition wall member that slides in an internal chamber. Since both references deal with structure sliding inside a chamber the references are considered to be analogous.

### ***Conclusion***

15. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **CRAIG M. SCHNEIDER** whose telephone number is (571)272-3607. The examiner can normally be reached on **M-F 8:00 -4:30**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on (571) 272-4777. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/C. M. S./  
Examiner, Art Unit 3753  
August 17, 2009

/Robin O. Evans/  
Supervisory Patent Examiner, Art Unit 3753